

Non-emergency Response for the City of Watertown Fire Department

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Appendices Not Included. Please visit the Learning Resource Center on the Web at <http://www.lrc.dhs.gov/> to learn how to obtain this report in its entirety through Interlibrary Loan.

Certification Statement

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Abstract

The problem is that the City of Watertown Fire Department (WFD) has not identified the need for a non-emergency response policy. The purpose of this research is to identify if a non-emergency response policy is needed. This research project will use a descriptive methodology using the following questions: a) What are the standards, laws and department policies and procedures that govern emergency vehicle response; b) What response methods are currently being utilized by agencies who support the mission of public safety in the City of Watertown; c) What are the response time differences between responding in emergency and non-emergency modes; d) What dispatch protocols are available that can be utilized to pre-determine whether a call requires an emergency or non-emergency response. The research procedure will use a literature review to compare existing department procedures with standards, laws, and procedures used by others as well as a comparison of response times to determine if there is a significant difference between responding in an emergency mode and non-emergency modes. The results indicate that a non-emergency response to certain addresses studied can meet the standard recommended by NFPA 1700 (2010). Additional findings include a requirement NFPA 1500 (2007) to have a policy of when and when not to respond in an emergency mode, and other agencies utilize non-emergency response policies currently. The recommendations are that the WFD needs to have a non-emergency response policy, and should provide training to personnel and review the policies to determine their effectiveness. Additional recommendations include; examining existing incident report software so that emergency and non-emergency responses can be tracked separately and to actively seek a method of notifying WFD responders of the response priority for the call.

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The City of Watertown Fire Department, like many fire organizations across the country, has policies and procedures that aid in the mission of delivering services to the community. Cook (1998) writes in his book, entitled *Standard Operating Procedures and Guidelines*, that policies and procedures need to be effective and meaningful as well as constantly updated and corrected (p.8). If a new service is to be provided, a new policy would need to be put into place to help guide the decision making process of the members who deliver the service. A recent review of department policies and procedures found that the current response policy deals only with emergency response.

The problem is that the City of Watertown Fire Department has not identified the need for a non-emergency response policy. The purpose of this research is to identify if a non-emergency response policy is needed for the organization. This research project will use a descriptive methodology to address the problem statement. The following questions will be used to address the problem: a) What are the standards, laws and department policies and procedures that govern emergency vehicle response; b) What response methods are currently being utilized by agencies who support the mission of public safety in the City of Watertown; c) What are the response time differences between responding in emergency and non-emergency modes; d) What dispatch protocols are available that can be utilized to pre-determine whether a call requires an emergency or non-emergency response.

The answering of these questions should allow this researcher the ability to determine if there is a need for a non-emergency response policy for the City of Watertown Fire Department.

Background and Significance

The City of Watertown was settled on the banks of the Black River which provided water power for mills, homes and a source to create electric power. Watertown is located in the center of Jefferson County, in upstate New York, and serves as the county seat, and has a population of 27,489 people, according to City-data.com (July 2009) The city's incorporated area is 8.96 square miles and is protected by a career fire department with eighty-one uniformed personnel. The Black River divides the city with a third of the land mass north of the river and the balance on the south. There are five bridges that span the river connecting the north to the south sides of the city. The fire department staffs one engine company on the north side of the city and the main station, housing an engine, truck and rescue company, as well as a second engine company, housed at station two, is located on the south side of the city.

The Watertown Fire Department (WFD) has, like many other fire departments across the country, taken on the responsibility of providing additional services beyond fire prevention and suppression, to create a safer community. This is evident when comparing call volume from twenty years ago to today. The incidents responded to by the WFD in 1990 totaled 1589 as compared to 2010 incident response of 3540, an increase of nearly 2000 additional calls in this twenty year period. This increase in call volume means a higher frequency of fire apparatus on the streets responding to incidents. The department is currently lacking any policy or procedures that allow for a non-emergency response to calls. On July 1, 1950, an engine company from station number three was responding to a fire call and was driving through an intersection when it was struck by a tractor trailer. The firefighter that was riding on the tailboard was thrown from the rig as the fire apparatus rolled over. The Watertown Daily Times reported that the firefighter's injuries were serious and his chance of recovery was poor (Watertown Daily Times,

July 1, 1950, p.8). The officer of the fire truck stated that the siren was sounding as they proceeded through the intersection against the red light. The call that they were responding to was a hay fire in a nearby township. The injured firefighter, Clarence S. “Frenchie” LaMora, age 38, died of his injuries leaving a wife and two sons. Firefighter LaMora had been appointed to the department as a firefighter on June 16, 1947 and was a veteran of World War II as reported in the Watertown Daily Times on July 5, 1950 (p.10).

The significance of the problem is that data from the United States Fire Administration (USFA) titled *Year-to-Date Summary Statistics (Provisional) On-Duty Firefighter Fatalities in the United States* (2011) in the year 2010 indicated nearly 20% of the fatalities occurred when firefighters were responding to or returning from incidents. The increase in response activity by the WFD may also increase the chances for an accident and can create a potential risk those firefighters or civilians may be injured or killed. The Executive Development course delivered at the National Fire Academy, provided students the opportunity to view problems from both a technical and adaptive approaches. The loss of a firefighter has a significant impact on the organization and the community they protect. The reduction of risks with regards to responding to calls not only enhances firefighter safety, but the civilians we protect as well. The prevention of such a loss is an adaptive issue in that many responders believe that it is their purpose to risk their lives for others. Reducing the risk to responders through prevention and mitigation at the local level is listed as the first goal of the USFA’s strategic plan and should be the goal of local fire leaders as well (USFA website).

Literature Review

A search for information with regards to the problem that the WFD has not identified the need for a non-emergency response policy was conducted at the Learning Resource Center

(LRC), located at the National Emergency Training Center, Emmitsburg MD, the library at the New York State Fire Academy, Montour Falls NY, the internet and reference material located at the fire station.

Hogan (2000) writes in his book, entitled *Legal Aspects of the Fire Service*, that in negligence cases, the legal standard of care is what a person with the same duties and under the same circumstances would do (p. 80). He cites that for the fire service, the National Fire Protection Associations (NFPA) standards are used as a measurement to make a determination of what others would do.

Determining what standards, laws and department policies and procedures exist with regards to responding to incidents is objective one in addressing the problem for the WFD. NFPA 1500, (2007) titled *Fire Department Occupational Safety and Health Program*, has an intended purpose of specifying minimum standards and guidelines for organizations involved in fire related activities. Chapter 6 of this standard is entitled fire apparatus, equipment and drivers/operators with section 6.2 giving specifics about what is recommended for drivers and operators of fire department apparatus are to do. Specifically, section 6.2.7 states;

The fire department shall develop standard operating procedures for safely driving fire apparatus during non-emergency travel and emergency response and shall include specific criteria for vehicle speed, crossing intersections, traversing railroad grade crossings, the use of emergency warning devices and the backing of fire apparatus (p. 1500-14).

Section 6.2.2.1, of the same standard, also identifies that drivers of fire apparatus shall operate the vehicle in compliance with traffic laws, and rules, regulations and procedures of the

fire department (p. 1500-14). Section 6.2.3 of NFPA 1500 (2007), indicates that the fire department shall establish when emergency responses are authorized and when they are not (p. 1500-14).

New York State Vehicle and Traffic Laws, has sections that are applicable to emergency vehicle operations. Title 1, Article 1 defines words and phrases used in the law. Section 101 identifies what types of vehicles that are considered an authorized emergency vehicle. The list includes police and fire vehicles as well as ambulances, but also included are sanitation patrol vehicles, hazardous material response vehicles and other vehicle types. Section 115a, of Title 1 Article 1, identifies what types of vehicles are considered a fire vehicle, which by the definition found in 101 are an authorized emergency vehicle. Title 1 Article 1 Section 114b is an important definition in that it defines what emergency operations are;

The operation, or parking of an authorized emergency vehicle, when such vehicle is engaged in transporting a sick or injured person, transporting prisoners, pursuing an actual or suspected violator of the law, or responding to or working or assisting at the scene of an accident, disaster, police call, alarm of fire, actual or potential releases of hazardous materials or other emergency. Emergency operations shall not include returning from such service (NYS Laws, Title1, Article1, Section 114b).

Title 7, Article 23 of NYS Vehicle and Traffic Law, rules of the road, continues with Section 1104 which states that drivers of authorized emergency vehicles, when involved in emergency operations, may be exempted from certain traffic laws, but the exemption only applies when the emergency vehicle is sounding an audible warning device and when the vehicle

has one lighted lamp that can be seen from all directions. This section goes on to state that the exemption does not relieve the driver from driving with due regard for the safety of others.

WFD Standard Operating Procedure (SOP) 3.20 was last updated on April 6, 2009 (Appendix E). The scope of this procedure outlines conditions where the driver of an authorized emergency vehicle may stop, stand or park, proceed past a red signal, exceed posted speeds, and disregard traffic direction posting. In order to be able to utilize these techniques, the emergency vehicle must be utilizing an audible signal and warning lights. This procedure also outlines that these provisions do not relieve the driver of driving with due regard for the safety of others. There is no mention of the responsibility of the officer of the emergency response vehicle. The WFD standard operating procedures for emergency response (SOP 3.20) most nearly resembles the responsibility of the operator of an emergency motor vehicle listed in NYS Vehicle and Traffic Law than those required under NFPA 1500 (2007)

Lindsey and Patrick (2007), who authored the book *Emergency Vehicle Operations* for Brady, write that there is a need to respond quickly and efficiently, but that the time saved by responding in an emergency mode probably will not greatly affect the outcome (p. 109). They go on to say that operators of emergency response vehicles should not operate in an emergency mode unless they are responding to a true emergency (p. 106). An emergency vehicle response guideline, developed by the Volunteer Fireman's Insurance Services (VFIS) gives the definition of a true emergency as "A situation in which there is a high probability of death or serious injury to an individual or significant property loss, and actions by an emergency vehicle driver may reduce the seriousness of the situation" (VFIS 2000). Lindsey and Patrick's theory is echoed by the Federal Emergency Management Agency's (FEMA) Emergency Vehicle Safety Initiative (2004), finding that the response time saved by responding in an emergency mode had no

significant impact on the outcome of the patient care with the exception of those suffering from cardiac arrest or an obstructed air way (p. 41). The departments studied by the FEMA Initiative have policies and procedures in place that certain call types are to be responded to in a non-emergency mode, thus reducing the chance for vehicular crashes which in turn can reduce fatalities and injuries to civilians and responders alike.

This leads to an unasked question to our problem statement, what are some of the known risks of responding to incidents. Mike Wilbur, a well known authority for emergency vehicle responses, writes in his article, *Apparatus Accidents; Nobody Wins* (January 2004), not only identified the potential loss of life and injury when an emergency vehicle is involved in an accident, but the loss of emergency equipment to the community and the emotional and psychological effects upon all of those individuals involved in major apparatus accident.

Bill Tricarico, a Loss Control Director for Emergency Services Insurance Program (ESIP) noted in his article, *Reducing Fire Apparatus Intersection Accidents* (2007), that we take risk every time we take the right of way. This is shown by the annual statics that approximately 25% of all line of duty fatalities is the result of apparatus accidents. He concludes that driving defensively, wisely using lights and sirens during a response and even, when possible, not using light and sirens at all are ways in which responders can reduce risks.

The National Highway Traffic and Safety Administration (NHTSA) reported in their study entitled *NHTSA Vehicle Safety and Fuel Economy Rulemaking and Research Priority Plan 2011-2013* (March 2011) that for year 2009, motor vehicle crashes killed more than 33,000 people and 2.2 million others were injured. 3% of those killed (1092) were occupants of large trucks, buses and other large vehicles, of which fire apparatus would be part of that class of large

trucks. The International Associations of Fire Chief's (IAFC) Technology Council report entitled *Information Paper on Technology for Citizen Notification of Responding Emergency Vehicles* (July 2011) indicated that nearly 70% of accidents of fire apparatus involving fatalities occurred when the vehicle was responding in emergency mode (p. 8).

The New York State Department of Motor Vehicles statistics for fire apparatus accidents for 2009 showed that there were 223 total accidents. Of those reported, 119 accidents resulted in the personnel injury of 282 people and the remaining 104 accidents resulted in damage to property.

To find answers to the second objective, what response methods are currently being utilized by other agencies, this researcher contacted Pam Heasley, Director of Communications and Patient Services at Guifoyle Emergency Medical Services (GEMS). She is responsible for dispatch services of GEMS who are the primary ambulance transport service for the citizens of the City of Watertown. In a personal communication conducted on September 14, 2011, she was asked if their agency uses a non-emergency response to calls. Her answer was yes; their ambulance service uses Medical Priorities, a dispatch priority system that was developed in Salt Lake City by a Doctor Jeff Clawson. They have successfully been using this service for over fifteen years. She went on to explain the GEMS utilizes four priority categories with priority one responses being a life threatening emergency and priority four being a routine transfer between medical facilities. The dispatcher for their ambulance service receives the call for assistance and uses a card index as a reference to ask pertinent questions about the incident. Based on the caller's answers to the questions, the dispatcher is directed to a dispatch priority that was developed by Medical Priorities and was approved by GEMS medical director (Personal

Communications P. Heasley, September 14, 2011). This information about the call is given to the assigned ambulance crew and their response priority is directed to them by the dispatcher.

A personal communication with Sergeant Charles Donoghue, of the Watertown Police Department (WPD) was conducted on October 18, 2011 and the topic of discussion was the emergency response modes used by the officers of the WPD. Sergeant Donoghue is the police department training officer and is responsible for overseeing and conducting the training of new recruits as well as in-service training of existing patrol officers and their supervisors. WPD, under their rules and regulations have a mode of response policy. An example Sgt. Donoghue gave of response mode one was if an officer gets a complaint of vandalized property that was not currently in progress, the officer would respond to this type of call with no emergency lights or siren being used. A mode two response would be with the patrol car emergency lights active, and mode three would be with both emergency lights and siren being active. An example of a mode two response would be if the patrol officer was responding from a long distance from the incident and was acting as a back-up to first arriving officers. A mode three example would be an emergency response to a motor vehicle accident with injuries. Mode four responses is an extreme emergency where an officer is requesting immediate assistance and officers would leave minor incidents to aide in the calling officer's request.

Sergeant Donoghue went on to explain that the patrol officer gets an incident assignment from the dispatch center, and then utilizes his or her training and judgment as to what response mode should be used to handle the call. A police supervisor may direct a patrol officer to respond to a call in a specific mode. Once an officer is on scene of the incident, they may direct other responding units to proceed to the scene in one of the response modes based on the seriousness of the situation. The WPD has no pre-determined response codes and rely on the

responding officer to use good judgment as to what mode of respond to utilize. Sergeant Donoghue stated that the response mode is not assigned by the dispatcher, but the information that the dispatcher relays to the officer is paramount for the officer to decide the appropriate response mode (Personal communications, C. Donoghue, October 18, 2011).

To find answers to our third objective, what are the response time differences between responding in emergency and non-emergency mode, this researcher needed to find what is an acceptable response time. The Insurance Services Office (ISO), who grade municipal fire protection, in their article *Response time – Considerations*, utilizes a distribution of engine companies, should be within 1.5 miles of the building they are grading. That equals to an expected response time of 3.2 minutes. NFPA standard 1710 (2010) titled *Standard for Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments*, under section 5.2.4.1, provides that an engine company should arrive within 240 seconds (4 minutes) travel time to 90% of the incidents it responds to (p. 1710-9).

To address our fourth objective of this research project, what dispatch protocols are available that can be utilized to pre-determine whether a call requires an emergency or non-emergency response, this researcher looked at what protocols are currently available for WFD to use. A vast majority of our responses start with a phone call to the dispatch center operated by county. The dispatch center is staffed on a twenty-four hour, seven day a week operation by dispatchers employed by Jefferson County. In 2010, the center handled 138,989 emergency calls, according to Fire and Emergency Management Director Joseph Plummer (Personal communication, November 21, 2011). The dispatch center is responsible for the receiving of calls and sending the appropriate agency. These agencies include; forty-four fire agencies (two

of which are career departments), seven volunteer ambulance services, Watertown Police Department (WPD), Jefferson County Sheriff patrols, New York State Police as well as eleven part and full time village patrols.

A typical emergency call is first picked up by one of five dispatchers. Their mission is to obtain from the caller what and where the emergency is located. From this information provided by the caller, the call taker assigns a dispatch code that most nearly depicts the emergency call. Agencies, such as WFD, have pre-assigned what resources are to be sent based on the dispatch code. As an example, for a reported elevator rescue, the WFD has assigned the truck and rescue companies to handle the incident. The call taker then transfers responsibility of the incident to one of the dispatch desks for assignment. There are three primary dispatch desks, Watertown Police, county law enforcement, which includes, NYS Police and Sheriff Patrols, and the fire and emergency medical services (EMS) desk. The computer aided dispatch (CAD) system will provide response recommendations based on the locations emergency services number (ESN), which then relates to the primary response agency that would be assigned the call.

The WFD has had mobile data terminals (MDTs) placed in their apparatus which allows the officer of the responding unit to view information entered by the call taker and updated by the dispatcher about the incident they are responding to. Most all communications between the dispatcher and WFD units are done over the VHF radios. With the MDTs there is the ability to utilize a secure mode e-mail application that is available through the CAD system, which is not normally used by responders from WFD. When a unit arrives on scene of the incident, they notify the dispatcher over the radio of their arrival, and then the dispatcher enters the time stamp in the computer for that incident. Every action taken on scene that is reported to dispatch during the incident gets a time stamp. At the conclusion of the incident, the officer notifies dispatch,

again by radio, that the incident is terminated and that the unit is available for another assignment.

Due to the fact that the activity times are entered by only the dispatcher, the time assignment may not necessarily reflect the actual amount of time to perform those activities. As an example, if a unit calls on scene, but the dispatcher is busy with another call and the unit rebroadcasts that they have arrived, the actual time of arrival by the apparatus is not recorded, but the time the dispatcher heard the second radio broadcast. At the conclusion of the incident, the computer software used by WFD (Firehouse) searches the computer software used by the dispatch center (Spillman) to create an incident report in the fire department data base, by which the company officer assigned to the response inputs additional information that relates to what the company observed, did and advised. This report then becomes a National Fire Incident Report (NFIR) and is later submitted to the State of New York as part of the information collection process overseen by the NYS Office of Fire Prevention and Control (OFPC).

When a call for medical assistance is received at the county dispatch center via a 911 call, the call taker obtains the nature of the call and where the incident has occurred. If the incident is outside of the City of Watertown, the call taker uses an emergency medical dispatch (EMD) protocol that was purchased by the county from Priority Dispatch Corp. to better serve the residents. If the medical call is located inside of the City of Watertown, the call taker verifies if WFD is also to respond, based on the nature of the call, and then transfers EMD responsibility to Guifoyle ambulance (GEMS) as they are the transporting agency and they dispatch their own ambulances to calls in the city and do their own EMD. Priority Dispatch Corp. provides dispatching protocols for a number of disciplines that include; medical, fire and law enforcement responses. In a conversation with Adam Hinkley, Director of Client Services, (personal

communication, October 17, 2011) for Priority Dispatch, that their protocols are based on best practices, however he stated that the end user can make the final determination with regards to what and how to respond to the incidents. The cost associated for the WFD to purchase their Fire Priority Dispatch System (FPDS) is estimated at \$200,000.

Procedure

The literature review brought to light to this researcher that an emergency response to an incident has an expected time of arrival from the time the crew is assembled and the vehicle starts to respond. NFPA 1710 (2010) has a response time of 240 seconds for the first arriving unit to both a fire and medical emergency incidents. Objectives one and two of this research project were addressed with the literature review portion of this paper

To address the third objective of this paper, what are the response time differences between emergency and non-emergency responses; this researcher contacted Matt Owen, a City of Watertown employee, who is responsible for the City of Watertown's Geographic Information Systems (GIS). He was asked, by this researcher, could he produce a map of the city with an outline of how far a four minute response was from each of the three fire stations. Mr. Owen stated that he needed a speed of the vehicle in order to calculate the travel distance and then he could map the coverage of the four minute response area. (Personal communication, M. Owen, November 7, 2011)

In 2002, the City of Watertown contracted with MMA Consulting Group Inc., of Boston, to conduct a study as to the operation and management of the fire department. As part of their study, coverage maps were produced using an average speed of 25 mph for vehicles responding to emergencies (p. 20). This speed was chosen by the consultants to simulate traffic and weather

conditions as well as responses of emergency vehicles during different times of day. As this study and data was used by the consulting firm to ensure that the City of Watertown had their fire stations located appropriately, it was considered to be an acceptable value to use as a speed of apparatus responding to emergencies for this research project. With a speed chosen, Mr. Owen was able to use a formula ($4 \text{ minute @ } 25 \text{ mph} = 1.667 \text{ miles}$) to calculate a distance from the fire station locations along the streets of the city to where the four minute response time would end. 1.667 miles is equal to 8800 linear feet. The map created is listed as Appendix A. Of the 116 miles of streets in the city, 10.1 miles, or 8.7%, fell outside of the 1.667 miles travel distance (Personal communication, M. Owen, November 8, 2011).. To give validity to the 1.667 miles from the station as a satisfactory coverage area, ISO has parameters that for their station coverage model that an engine company be able to cover the area within 1.5 miles of the station.

This researcher then reviewed the 3540 incident responses from the 2010 data of the fire department to determine what addresses are routinely responded to so that a comparison of emergency and non-emergency response times could be established. The list of address was reduced down to thirty-five that had five incidents or greater at a single address. These responses to these particular thirty-five addresses constituted 24% of the total responses for 2010. These addresses (Appendix B) were then plotted on the city map created by Mr. Owen to allow this researcher the ability to select address that would need further study. This map is listed as Appendix C. One of the addresses that was responded to the most in 2010 is 142 Mechanic Street, (map location 13), also known as Midtown Towers. WFD emergency personnel responded to this address over ninety times. This building is a sixteen story, Type I constructed, senior citizen housing project that has ten apartments on each floor above the ground floor. After a multi-fatal, intentionally set fire in 1989, the Watertown Housing

Authority, (owner of the building) retrofitted the building with a sprinkler and standpipe system. A review of the types of incidents to this address indicated that medical assistance calls constituted seventy-five of the total ninety-two calls to that address.

As the map, Appendix C, indicates, there are many addresses that are within a few blocks of the fire station locations such as 218 Stone Street (map location 24). This researcher did not look at specifics response data of this address as it is two blocks from the main fire station located at 224 S. Massey Street. It is an assumption by this researcher, that due to its close proximity of this location to the main fire station that units routinely arrive within the four minute response requirement of NFPA 1710 (2010) and due to its very close proximity, that if units responded in a non-emergency mode that first arriving units would also be there in an acceptable time of less than four minutes.

This researcher selected four locations that had multiple responses and were outside of the close proximity of the city's fire station locations. The addresses selected were 1010 Washington Street (location 1 on map Appendix C), 847 LeRay Street (location 35 on map Appendix C), 1220 Coffeen Street (location 7 on map Appendix C), and 1620 Huntington Street (location 16 on map Appendix C). Each of these locations had multiple responses, so that an average response time could be achieved. Response time for this study is for actual wheel movement of emergency apparatus. This researcher verified, for each response studied, the en-route time and entered that time into the response chart for each incident at a particular address (Appendix D). The difference between the en-route time and the on-scene time was calculated and also placed on the chart. As it could not be determined where the response vehicle started the response from, the two shortest and longest response times (colored in blue) were not utilized to determine an average emergency response time for each studied address.

1010 Washington Street is also known as Centennial Apartments. This building was constructed in 1978 and is three stories in height. The building is of Type V construction and is owned by Emma Schley Housing and Develop Fund Corp Inc. The building is not equipped with a sprinkler system, but has a fire alarm system which is monitored by a third party alarm company. The building contains 101 apartments that are available to seniors or mobility impaired citizens. The WFD responded to twenty calls for assistance in the year 2010. Of these calls three of the twenty were for fire alarm activations and the other seventeen were for medical assistance. Nine of the seventeen medical calls were for a person who had fallen. The average response time to this address from Station 1 was 3 minutes 10 seconds..

847 LeRay Street is also known as LeRay Street Apartments. This building was constructed in 1982 and is five stories in height. The building is of Type II construction and is owned by the Watertown Housing Authority. The building is fully sprinkler building with a fire pump and has a fire alarm system that is monitored by a third party alarm company. The building contains sixty five apartments available to seniors or mobility impaired citizens. The WFD responded to thirty three calls for assistance in the year 2010 at this address. Of these calls, two were for fire alarm activation and the remainder of the calls was for medical assistance. Thirteen medical calls were for persons with difficulty breathing. The average response time to this address from Station 1 was 2 minutes 39 seconds.

1220 Coffeen Street is also known as Jefferson Community College. This campus contains eight educational buildings that were constructed at various times during the college's fifty years of existence. All of the buildings are of Type I and II construction and there is a sprinkler system in place for areas of public assembly and a fire alarm system for all buildings. The alarm systems are monitored by campus security, which is staffed at all times of the day and

night. In 2010, the WFD responded to sixteen calls for assistance at the college. Eight of the calls were for medical assistance and five were for fire alarm activation. The average response time to this address from Station 1 was 4 minutes 4 seconds.

1620 Huntington Street is also known as Huntington Heights Apartments. This complex has nineteen wood frame constructed buildings with a total of 151 apartments. The complex was built in 1982 and none of the buildings have a sprinkler system, but there is a fire alarm system in the common areas of the garden apartments. In 2010, the WFD responded to thirty six calls for assistance of which twenty nine were for medical assistance, one cooking fire and two outdoor fires. The average response time from Station 1 was 5 minutes 22 seconds and the average response time from Station 2 was 3 minutes 27 seconds.

The researcher then did drive test to each of the four locations in the study. The drive test consisted of departing from Station 1, located at 224 S. Massey Street, and using a stopwatch, recording the drive time to the location using a department staff vehicle and driving within normal traffic flows. For 1620 Huntington Street, the drive test was done from Station 2, located at 906 State Street. The same route, for each address, was traveled five times over a three day period and at different times during the normal eight to five work day. The five drive times for each location are listed in Table1, titled Drive Test Times for Research.

Table 1:

Drive Test Times for
Research

| Address | Test 1 | Test 2 | Test 3 | Test 4 | Test 5 | Average |
|---------------------------|-----------|-----------|-----------|-----------|-----------|---------|
| 1620 Huntington Street | 3:01 | 2:45 | 3:16 | 3:03 | 3:07 | 3:02 |
| 1220 Coffeen St. | 6:56 | 7:29 | 5:01 | 6:21 | 5:40 | 6:17 |
| 1010 Washington | 3:17 | 3:12 | 2:53 | 3:22 | 3:39 | 3:16 |
| 847 LeRay | 3:48 | 4:07 | 3:41 | 3:53 | 4:53 | 4:04 |

Times are in Minutes and Seconds

Results

With regards to objective one, a review of laws, standards, department policies and procedures finds that the department standard operating procedures (SOP) 3.20, that was last updated on April 6, 2009, most nearly replicates NYS Vehicle and Traffic Law Title 7 Article 23 Section 1104 by allowing the emergency vehicle to proceed through a red signal after slowing down and not coming to a stop as recommended by NFPA 1500 (2007), Section 6.2.8. There is no other language in SOP 3.20 referring to a non-emergency response or vehicle movement as recommended by NFPA 1500 (2007), Section 6.2.3 which states that there shall be established guidelines as to when emergency response is not to be utilized.

With regards to the second objective, as to whether other response agencies that serve the citizens of Watertown have a response method, the answer is yes. Both the WPD and GEMS have response methods in place. GEMS uses a tried and true method of EMD and has a trained individual ask questions of the caller that directly relates to the incident at hand. The determination as to what response method is used is tied directly to the answers given by the

caller as to the severity of the incident. They also utilize a number system of priority response by which the number one is the highest priority, responding with emergency lights and siren, and four is the lowest.

WPD response method is completely left to the decision of the assigned officer. He or she receives information about the incident they are assigned from the dispatcher and then utilizes what they feel is an appropriate response. The number four response mode, for WPD personnel, is the highest response priority mode, using emergency lights and siren, and the number one is their lowest.

The third objective was to look at the differences between responding to an address in emergency and non-emergency mode. Table 2 shows the difference between the average emergency response time and the average drive test time in a non-emergency mode.

Table 2.

Difference Between Response time and Drive Time Averages

| Address | Average Emergency Response Time | Drive Time Average | Difference |
|-------------------------|---------------------------------------|-----------------------|------------|
| 1010 Washington Street | 3:10 | 3:16 | 0:06 |
| 847 LeRay Street | 2:40 | 4:04 | 1:24 |
| 1220 Coffeen Street | 4:04 | 6:17 | 2:13 |
| 1620 Huntington Street* | 3:47 | 3:02 | -0:45 |

* time from Station 2
(Time in Minutes and
Seconds)

For 1010 Washington Street, map location 1, the average time difference between emergency and non-emergency response was only six seconds. Appendix D shows that the range of emergency response times to that address was from 1 minute and 47 seconds to 5 minutes and 36 seconds. There were nine out of sixteen response times between 2 minutes 30 seconds and 3 minutes 20 seconds. The shortest drive time test to this address was 2 minutes 53 seconds and the longest was 3 minutes 39 seconds (Table 1). One would conclude from this data that driving in a non-emergency mode to this address would not greatly delay the arrival of WFD units responding from Station 1. The route chosen for the time test had two stops signs and one traffic light that had to be navigated through. At the stop light, the turn was to the right, so if traffic allowed, a right on red turn was used. The ease of this particular route may be a reason why the non-emergency drive test time was only slightly longer than the emergency response time average.

For 847 LeRay Street, map location 35, Table 2 shows a much larger difference, 1 minute 24 seconds, between the average emergency response time and the drive test time average. Appendix D shows that the shortest emergency response time was 1 minute 28 seconds and the longest was 4 minutes 6 seconds. Fifteen of the twenty-eight emergency response times were between two and three minutes. The response route from Station 1 to the address requires a left turn from the station apron and then proceeding through five traffic lights. The longest red traffic light hold was for forty-five seconds, creating the drive time for the last drive to come in at nearly five minutes. The other four drive test times were nearer the four minute mark. This is comparable to the NFPA Standard 1710 (2010), for a response of less than 240 seconds for the arrival of the first responding unit.

For 1220 Coffeen Street, map location 7, Table 2 shows a difference of 2 minutes 14 seconds between the average emergency response time and the average drive time. From Appendix D, the average response time of 4 minutes 4 seconds should only be viewed as an average, only six responses out of twelve (50%) were 240 seconds or less, which is the recommendation of NFPA 1710 (2010). The location of 1220 Coffeen Street is outside of the 1.667 mile drive of four minutes at twenty-five miles per hour. The data collected indicates that non-emergency response to this address would not meet the standard and could become an issue. The shortest drive test time to this location was 5 minutes 1 second and the longest was 7 minutes 29 seconds, from Table 1. The route to this location is not only lengthy, but there are five traffic lights to proceed through with two of them requiring left turns.

For 1620 Huntington Street, map location 16, the average response time from Station 1 is 5 minutes 26 seconds and the average response time from Station 2 is 3 minutes 47 seconds using data from Appendix D. Emergency vehicles responding from Station 1 cannot be on scene in less than 240 seconds as recommended by NFPA 1710 (2010). Since 2003 when the WFD acquired automatic external defibrillators (AED) for each of the response vehicles, the department has assigned the closest engine to respond to reported serious medical calls, such as an unconscious person. This assignment helps ensure that medical help will arrive in a timely fashion and meet the recommended response time in NFPA 1710 (2010). This procedure of responding the closest engine to “true” emergencies is proven to have been a good idea and is verified by the response data from these two stations. The drive test average from Station 2 for responding to 1620 Huntington Street was 3 minutes 3 seconds. This is forty-four seconds quicker than the average emergency response time average. Reasons for the drive time test being quicker may be the difference in what route was taken between the drive test and the normal

emergency response route traveled by Engine 2 or the fact that as this researcher turned into the complex, time was stopped, and responding units may not report on scene until they arrive at the building where the incident has occurred.

Of the four address locations that were chosen for this research project, three of them could have a response time that meets the NFPA 1710 (2010) standard of less than 240 seconds and be driven to in a non-emergency mode. The fourth address, 1220 Coffeen Street, is outside of the 240 second response area to begin with, so the idea that responding in a non-emergency, which is usually a longer response time, to this address may not be warranted. The data supports the idea that responding to some and not all addresses can be accomplished in a non-emergency mode.

The fourth objective as to what protocols are available that can be utilized to pre-determine whether a call requires an emergency response is directed in the purchase of a product such as Priority Dispatch. Their best practices regulate what type of response is needed based on seriousness of the call type. After speaking with a company representative from Priority Dispatch, they and other vendors have protocols that are for fire service emergencies. It would appear that the Authority Having Jurisdiction (AHJ) has the ability to direct the vendor of the product to make certain call types require certain responses even if best practices determine otherwise. The question remains that even though products are available, the AHJ can make the response what they want, so why involve a vendor; why not make the response policy what the AHJ wants to begin with.

For two thirds of calls that were responded to by WFD in 2010, the dispatch center has a mechanism (EMD) to differentiate critical and non-critical medical calls, but does not utilize it

based on redundancy of having GEMS do the same EMD once they get the call transferred. Thus there is a potential for delaying the response of the emergency services. There is a system that is utilized to provide for patient care and get the appropriate response by the ambulance that will transport the patient, but responders from WFD are not receiving this information so that they are unable to adjust their response method based on information obtained through the EMD process.

Discussion

With regards to research objective one, NFPA 1500 (2007), Section 6.2.3, uses the word “shall” when referring the need to have rules, regulations and procedures when an emergency response is authorized and not authorized. Hogan (2000) gives insight as to the legal standard of care is what others would do in the same situation. Our department standard operating procedure, 3.20 only address what the driver of the apparatus can do when responding with emergency lights and siren and not how to respond in a non-emergency mode which is the problem statement for this project. It would be an unprofessional act if this researcher, as fire chief, did not act on implementing a non-emergency response policy on these two pieces of information alone.

So how does this researcher convince other members of the department that it is a good idea to have such a policy? After all, are we not emergency responders and time is a critical measure of our abilities. The use of an adaptive change, as instructed in the Executive Development class, that this researcher recently attended at the National Fire Academy, may prove to be the method of choice. The use of Lindsay and Patrick’s (2007) position on response time could be helpful when they state that “the few minutes saved will probably not matter” (p 109). This statement by experts and the average response time data when compared to the drive

test data may show some members of the organization that responding to certain types of calls or certain addresses in a non-emergency mode has merit. Especially when it can be shown that 24% of our 2010 call volume was to thirty-five address in the city, and all but four of these address, when viewing the map Appendix C, could be reached in less that 240 seconds as recommended by NFPA 1710 (2010).

Some may claim that you need to respond with lights and sirens to all calls because there may not be adequate information gathered to be able to determine if a “true” emergency exist. Once an emergency response unit arrives on scene and determines that a “true” emergency does not exist, there is no need for the other units responding to the same incident to utilize lights and sirens. This may be one of the items to be considered when developing a non-emergency response policy for the WFD.

Learning that other emergency response agencies that serve the City of Watertown already utilize a response mode method may also help in accepting that it can also be done for WFD. How to label the methods of response to be used by the WFD will be an issue as both GEMS and WPD use numbers to identify their response modes, but the priority number one means different things to them. For WPD, priority one is the lowest response level and for GEMS it is the highest. As there is no universal response protocol, research into different fire department’s response policies will be necessary to develop the WFD policy. However, if we chose to utilize WMD, as a majority of our calls are of a medical nature, utilizing the number system by GEMS would make the most sense.

The research indicates that there are dispatch protocols (EMD) in place to determine if a medical call requires an emergency or non-emergency response, but the issue is getting that

information to the WFD response unit. When this topic was discussed by this researcher with representatives of county dispatch and GEMS, dispatch states that they are too busy to listen while GEMS does the EMD for calls inside of the City and GEMS representatives state that when they pick up the call, they do not know that it was transferred from county dispatch. Both agencies seem not to want to cooperatively solve the issue when dealing with this public service. This does not appear to be a technical challenge, as there seems to be systems in place, but an adaptive one of their willingness to do what should be done. This will be something else to work toward in developing a non-emergency response policy, a spirit of cooperation between agencies.

The purchase of a system from vendors to prioritize medical calls has been in use for at least fifteen years by GEMS, and the county just recently purchased a software package so that they can perform a similar service. If a software package was being looked at for fire incidents, it would most likely need to be compatible with current dispatch computer systems at the dispatch center. The cost of such a program would need to be budgeted for and the results may be nothing more than the AHJ saying how they want units to respond. Reference material by Cook (1998), Lindsey and Patrick (2007), and FEMA (2004) give examples of the types of calls that could be considered emergencies and non-emergencies. This researcher does not believe that spending \$20,000 on a software program has merit for our small department, especially when 60% of our call volume is medical calls that can be prioritized by both dispatch and GEMS that currently are using EMD. The balance of the other calls that WFD respond to could use the best practices of others to determine priority responses.

The increase in call volume does not necessarily mean that there are more emergencies, just more calls. Not all calls are emergencies, and by only having a policy that does not reflect a procedure for responding in a non-emergency mode hampers the company officers ability to look

out for the safety of his crew and the citizens we protect. The avoidance of accidents that cause injury and the deaths of 20% of those firefighters that die annually can be enhanced by a non-emergency response policy for WFD. If there were a non-emergency response policy in the fire department in 1950, would the fire officer have used emergency lights and siren when responding to a hay fire outside of the city? Could the death of Firefighter LaMora have been possibly prevented with the simple adoption of a non-emergency response policy? The fact is that the WFD doesn't have a non-emergency response policy, and the death of FF LaMora was a contributing factor in conducting this research project.

Recommendations

It is apparent through this research project that the WFD needs to develop policy and procedures with regards to responding to calls in a non-emergency mode. The process will utilize best practices to ensure a timely response to all calls for assistance. The policy should distinguish what response units should do when there is adequate information to determine if a "true" emergency exist or not. Once the policy and procedure are in place, all members of the WFD will be informed and trained on the proper use of the procedures. Review of all department policies and procedures will also be conducted as time moves on and those that need updating, will be.

A second recommendation is the review of existing incident report software so that incidents where units responded in a non-emergency mode can be noted and filtered from emergency response incidents. This will allow for a more accurate accounting of response times so that average response times can be compared to recognized standards such as NFPA 1710 (2010). The use of response time has been used as a measure of department efficiency. Taking

the average of all response times, emergency and non-emergency could give false indications when trying to meet standards.

A third recommendation is once a non-emergency response policy is in place, that a continuation of reviewing response information to make sure that appropriate response methods are being utilized. There may be some incident types that once a priority is established, may need to be amended for both emergency and non-emergency types of calls.

A fourth recommendation, and one that should be done immediately, is to broker a deal between dispatch and GEMS so that once EMD is completed for medical calls, no matter who does it, that the recommended response method is being relayed to WFD responders so that they can adjust their response appropriately. This recommendation will utilize an existing system that dispatchers are familiar with and only add one additional step of notification to responders. This one critical step can make the difference between the safe delivery of emergency services or an accident with an emergency vehicle that may have been preventable.

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